

REMARKS

Applicants are amending their claims in order to further define various features of the present invention. Specifically, Applicants are adding new claim 23 to the application. Claim 23, dependent on claim 1, recites that the epoxy resin includes an epoxy resin having a glycidylamine part derived from 1,3-bis(aminomethyl)-cyclohexane. Note, for example, previously considered claim 1.

Applicants respectfully traverse the rejection of their claims in the Office Action mailed August 10, 2007, as clarified in the Advisory Action mailed December 14, 2007, and respectfully submit that all of the claims presented for consideration by the Examiner patentably distinguish over the teachings of the references applied by the Examiner in the Office Action mailed August 10, 2007, that is, the teachings of the U.S. patents to Gerdes, et al., No. 4,719,135, to Huang, et al., No. 3,683,044, and to Tashiro, et al., No. 3,704,229, under the provisions of 35 USC 103.

It is respectfully submitted that these references as applied by the Examiner would have neither taught nor would have suggested such a fuel system as in the present claims, having the coating layer as recited in claim 1, the coating layer being formed by coating an epoxy resin composition comprising (a) an epoxy resin and (b) an epoxy resin curing agent as principal components, (1) wherein the coating layer has a gasoline permeability coefficient of $2\text{g}\cdot\text{mm}/\text{m}^2\cdot\text{day}$ or less at 60°C and a relative humidity of 60% RH; (2) wherein the epoxy resin includes at least one selected from an epoxy resin having a glycidylamine part derived from metaxylylenediamine, and an epoxy resin having a glycidylamine part derived from 1, 3-bis(aminomethyl)-cyclohexane; (3) wherein the epoxy resin curing agent

comprises a reaction product of the following (A) and (B) or a reaction product of the following (A), (B) and (C):

- (A) metaxylylenediamine or paraxylylenediamine;
- (B) a multifunctional compound having at least one acyl group which can form an amide group part by reacting with polyamine to form a oligomer, the multifunctional compound being selected from the group consisting of acrylic acid, methacrylic acid, and derivatives of acrylic acid, methacrylic acid, maleic acid, fumaric acid, succinic acid, malic acid, tartaric acid, pyromellitic acid and trimellitic acid; and
- (C) monovalent carboxylic acid having 1-8 carbon atoms and/or a derivative thereof;

and (4) wherein the coating layer contains the skeletal structure of formula (1), at least in an amount of 30% by weight based on the weight of the coating layer. See claim 1.

As will be shown in the following, it is respectfully submitted that the combined teachings of the references as applied by the Examiner do not disclose, nor would have suggested, the combination of the features of (1)-(4) in claim 1, providing unexpected advantages of unexpectedly low gasoline permeability coefficient while having good mechanical properties as a structure of a fuel system. Note that these features include metaxylylenediamine or paraxylylenediamine being a reactant in forming the epoxy resin curing agent recited in the present claims.

In particular, and as will be shown infra, it is respectfully submitted that the Tashiro, et al., and Huang, et al. references, which do not disclose or suggest materials for fuel systems as in the present claims, would not have been properly combinable with the teachings of Gerdes, et al. or address problems addressed by

the present invention which is directed to fuel systems, absent hindsight use of Applicants' disclosure, which of course is improper under the guidelines of 35 USC 103.

Furthermore, it is respectfully submitted that the teachings of the applied references would have neither disclosed nor would have suggested such a fuel system as in the present claims, having features as discussed previously, and in particular wherein the epoxy resin includes the resin having a glycidylamine part derived from metaxylylenediamine as a principal component (see claim 6), or wherein the epoxy resin includes an epoxy resin having a glycidylamine part derived from 1,3-bis(aminomethyl)-cyclohexane (see claim 23).

In addition, it is respectfully submitted that the teachings of the applied references would have neither disclosed nor would have suggested such fuel system as in the present claims, having features as discussed previously in connection with claim 1, and, additionally, wherein the gasoline permeability coefficient is $0.2\text{g}\cdot\text{mm}/\text{m}^2\cdot\text{day}$ or less (see claim 2); and/or wherein the multifunctional compound (B) reacted in forming the epoxy resin curing agent is that set forth in claim 8; and/or area rate of the coating layer formed on the fuel vessel body, as in claim 9; and/or materials of the fuel vessel body or fuel vessel or molded part bodies, as in claims 10-14; and/or wherein the fuel system includes a tube body as in claim 15, with material of the tube body as in claim 16, especially with blending proportions of the epoxy resin curing agent to epoxy resin as in claim 17; and/or wherein the coating layer is formed on at least one of the connected parts as in claim 18; and/or reaction mole ratio of components of the curing agent as in claim 19; and/or blending proportion of epoxy resin curing agent to epoxy resin as in claim 20; and/or thickness of the coating layer as in claim 21; and/or wherein the multifunctional compound

reacted in forming the curing agent, is selected from the group consisting of the derivatives set forth in claim 1 (see claim 22).

The present invention is directed to a fuel system which includes at least one of various components such as, for example, a fuel vessel, molded parts for the fuel vessel and a tube for a fuel. In particular, the present invention is directed to such fuel system having excellent performance in preventing permeation of, e.g., gasoline, while having good heat resistance and impact resistance.

In recent years, use has been made of thermoplastic resins in fuel systems, as compared with use of metal, providing advantages of a reduction in weight, prevention of rust, ease in molding and ability to be recycled. However, in previously proposed fuel systems, various performances, such as heat resistance, water resistance, impact resistance, and avoidance of permeation of gasoline, has not been sufficiently satisfactory.

Against this background, Applicants provide a fuel system excellent in gasoline barrier property, heat resistance and impact resistance, and which also (when used in forming a tube of, e.g., rubber) has excellent flexibility. Moreover, the fuel system can be provided at relatively inexpensive cost, insuring a high profitability. Applicants have found that by forming the fuel system utilizing a thermoplastic resin and/or a rubber as the body of the fuel system, and providing a coating layer on at least one side of the body, the coating layer being formed by curing an epoxy resin composition including a specified epoxy resin and a specified epoxy resin curing agent, the coating containing a specified amount of the skeletal structure of general formula (1), as in present claim 1; and wherein the coating layer has a gasoline permeability coefficient of 2 g·mm/m²·day or less at 60°C in a relative humidity of 60%RH, objectives according to the present invention are achieved. In

particular, an excellent gas barrier property is achieved, the fuel system has excellent heat and impact resistance, the coating layer has excellent adhesiveness to the body of thermoplastic resin, and the fuel system can be provided relatively inexpensively.

Thus, as described on pages 17, 18, 23 and 24 of Applicants' specification, by utilizing the specified epoxy resin curing agent, and specified epoxy resin, in the epoxy resin composition cured to form the coating layer, the coating layer including the skeletal structure of general formula (1), and at least 30% by weight (of the total weight of the coating layer) being of the skeletal structure of general formula (1), as in the present claims, a good adhesiveness of the coating layer to various materials, high gasoline barrier property, flexibility and heat resistance are achieved.

Note that the multifunctional compound of (B) and the monovalent carboxylic acid of (C) respectively include compounds having at least one acyl group which can form an amide group part by reacting with polyamine to form an oligomer, the multifunctional compound being selected from a specified group of acids and derivatives, and monovalent carboxylic acids having 1-8 carbon atoms and/or a derivative thereof. As for these components (B) and (C), note the paragraph bridging pages 23 and 24, as well as the sole full paragraph on page 24, of Applicants' specification, describing illustrative specific materials as well as the derivatives.

Gerdes, et al. discloses a coated polymeric article, e.g., a polyethylene substrate, having reduced permeability for fuels, particularly gasoline-type fuels, and characterized by a two component, preferably three component, varnish coat comprising: (a) an epoxy resin, e.g., preferably having an epoxy equivalent weight of about 150-280, (b) an effective amount of a specified amine-based curing agent as

set forth in lines 3-11 of column 2, and preferably a third varnish component which is a flexibilizer, e.g., a suitable amount of isocyanate prepolymers, e.g., one based on an isocyanate prepolymer containing ether groups and urethane groups. Note the paragraph bridging columns 1 and 2 of this patent. See also column 2, lines 37-41. This patent discloses that suitable epoxy resins are those containing more than one epoxide group, e.g., 1.5-5, in the monomeric unit. See column 2, lines 56-58. Note also column 2, lines 59-68, for particularly suitable epoxy resins. Note also column 3, lines 1-35, for curing agents for use in forming the fuel impervious polymeric article of Gerdes, et al.

It is respectfully submitted that Gerdes, et al. requires an amine-based curing agent as set forth in column 2, lines 1-11; and it is respectfully submitted that this reference does not disclose, nor would have suggested, structure as in the present claims, wherein the epoxy resin composition cured to form the coating layer includes an epoxy resin curing agent as in the present claims, comprising a reaction product of (A) and (B) or reaction product of (A), (B) and (C), or wherein the coating layer has the recited gasoline permeability coefficient, or other features of the present invention, including the epoxy resin and skeletal structure of general formula (1) of the coating layer (much less the amount of skeletal structure of general formula (1) in the coating layer).

It is emphasized that Gerdes, et al. does not disclose, nor would have suggested, use of xylylenediamine. It is respectfully submitted that Gerdes, et al. would have neither taught nor would have suggested the skeletal structure of the formula (1), much less amount of 30% by weight or more, based on the weight of the coating layer, of the formula (1) in the coating layer, and advantages due thereto.

The contention by the Examiner that the disclosure of Gerdes, et al., with respect to the invention described therein, is not limited to the examples, is noted. However, as indicated previously, it is respectfully submitted that nowhere in Gerdes, et al. is there a disclosure of the use of xylylenediamine. Certainly, without disclosure of xylylenediamine, amount of the skeletal structure represented by the formula (1) in the coating layer would have neither been disclosed nor would have been suggested by Gerdes, et al.

It is respectfully submitted that Gerdes, et al. teaches that the glycidyl ether of bisphenol A is particularly suitable, as set forth in the last paragraph in column 2 of Gerdes, et al. It is respectfully submitted that Gerdes, et al. is completely silent about use of glycidylamine part derived from metaxylylenediamine, as in the present claims.

The contention by the Examiner in the next-to-last paragraph on page 2 of the Advisory Action mailed December 14, 2007, that Applicants argue "that the example of Gerdes et al comprises the claimed structure in an amount less than 30%" is noted. This mischaracterizes Applicants' argument. In this regard, it is respectfully submitted that Gerdes, et al. does not even disclose the skeletal structure represented by formula (1), much less the amount thereof, based on the weight of the coating layer, as in the present claims.

Thus, it is respectfully submitted that Gerdes, et al. is deficient with respect to at least each of the following features as in the present claims, and the combination thereof, providing advantages as discussed herein:

- (1) the coating layer having the specified gasoline permeability coefficient;
- (2) wherein the epoxy resin includes at one selected from an epoxy resin having a glycidylamine part derived from metaxylylenediamine, and an

epoxy resin having a glycidylamine part derived from 1,3-bis(aminomethyl)-cyclohexane;

- (3) wherein the epoxy resin curing agent comprises a reaction product of (A) and (B), or a reaction product of (A), (B) and (C), as in claim 1; and/or
- (4) the coating layer contains the skeletal structure of formula (1); and/or
- (5) the coating layer contains such skeletal structure of formula (1) at least in an amount of 30% by weight based on the weight of the coating layer.

Applicants respectfully traverse the contention by the Examiner in the first paragraph on page 4 of the Office Action mailed August 10, 2007, that the claimed formula (1) would be contained in an amount of 30% by weight, in the structure of Gerdes, et al. As will be shown in the following, in connection with the structure of the Example in Gerdes, et al., set forth in column 5 thereof, the claimed formula (1) would be contained in an amount much less than 30% in Gerdes, et al. In other words, it is respectfully submitted that Gerdes, et al. would have neither disclosed nor would have suggested the structure of the present claims, including wherein the coating layer contains the skeletal structure represented by formula (1) in an amount of 30% by weight or more based on the weight of the coating layer.

Thus, the varnish formulation actually taught in the Example of Gerdes, et al. contains the following ingredients:

- (A) 59 parts by weight of epoxy resin;
- (B) 7 parts by weight of flexibilizer; and
- (C) 34 parts by weight of a mixture of:

7.79 parts by weight of 3-aminomethyl-3,5,5 trimethylcyclohexylamine (diamine 1),

6.38 parts by weight of a mixture of 2,2,4- and 2,4,4-trimethylhexamethylenedamine (diamine 2),

5.67 parts by weight of epoxy resin,

1.70 parts by weight of salicylic acid, and

12.46 parts by weight of benzyl alcohol.

The molecular weight is 170 for diamine 1 ($C_{10}H_{22}N_2$), 158 for diamine 2 ($C_9H_{22}N_2$), and 136 for xylylenediamine ($C_8H_{12}N_2$).

If xylylenediamine is used in place of the diamines 1 and 2 in the same molar amounts, the varnish formulation contains the following ingredients.

(A) 59 parts by weight of epoxy resin;

(B) 7 parts by weight of flexibilizer; and

(C) 34 parts by weight of a mixture of:

6.23 parts by weight $((7.79/170) \times 136)$ of xylylenediamine in place of the diamine 1,

5.49 parts by weight $((6.38/158) \times 136)$ of xylylenediamine in place of the diamine 2,

5.67 parts by weight of epoxy resin,

1.70 parts by weight of salicylic acid, and

12.46 parts by weight of benzyl alcohol.

Letting the varnish formulation consist of only the epoxy resin and the amine curing agent for simplification, the content of the claimed formula (1) in a composition corresponding to that in Gerdes, et al., but including xylylenediamine, is calculated as 17% by weight $(12/(12 + 59) \times 100)$, which is far lower than the claimed range of

30% by weight or more. It should be noted that the content in the actual formulation in the Example in Gerdes, et al. would be smaller than 17% by weight, because of the presence of other ingredients.

Thus, the content of the claimed structure (1) corresponding to the Example of Gerdes et al., even where xylylenediamine is used, is much smaller than the presently claimed range. It is respectfully submitted that Gerdes, et al. would have neither taught nor would have suggested, and in fact would have taught away from, amount of skeletal structure of general formula (1) as in the present claims.

It is respectfully submitted that the additional teachings of the secondary references as applied by the Examiner would not have rectified the deficiencies of Gerdes, et al., such that the presently claimed invention as a whole would have been obvious to one of ordinary skill in the art.

Tashiro, et al. discloses epoxy resin compositions having room temperature curability, the curing agent being sufficiently curable even in a wet state and having an improved compatibility with tar. The curing agent disclosed in this patent can be obtained by addition and condensation reactions of three components A, B and C, A being an acrylic or methacrylic acid ester, B being one of slightly water-soluble or insoluble aliphatic amines having a primary amine radical or an amine mixture thereof, and C being (a) a xylylenediamine having a specified structural formula and having both properties of aliphatic amine and aromatic amine, and (b) a 70:30 mixture of metaxylylenediamine and paraxylylenediamine. See column 1, line 59 through column 2, line 16. Note also column 2, lines 17-49, describing how the components A-C of the curing agent are reacted.

Huang, et al. discloses a heat-curable resinous composition comprising polyglycidyl xylylenediamine, obtained by the reaction between xylylenediamine and

epichlorohydrin. This patent document discloses that the disclosed material has a relatively low viscosity resulting in a good workability, and gives cured products exhibiting a high heat distortion temperature. Note column 1, lines 6-9 and 61-67. Note also column 4, lines 21-25. Huang, et al. discloses that the polyglycidyl xylylenediamine can be readily cured with the aid of curing agents customarily used for curing of glycidyl compounds, such as aliphatic or aromatic polyamines and organic carboxylic anhydrides. Note column 4, lines 37-41. This patent further discloses that the polyglycidyl xylylenediamine provides an industrial material exhibiting a low viscosity suitable for adhesives and castings, and a cured product prepared therefrom shows a high heat resistance. See column 5, lines 19-25.

Initially, it is respectfully submitted that the teachings of Gerdes, et al., as applied by the Examiner, would not have been properly combinable with the teachings of either of Tashiro, et al., or of Huang, et al. Thus, it is noted that Gerdes, et al. is directed to a fuel impervious polymeric article, facing the problem of providing such article without a primer or adhesion promoter. In contrast, Tashiro, et al. is directed to an epoxy resin curing agent which is sufficiently curable even in a wet state and having an improved compatibility with tar; and Huang, et al. is directed to a heat-curable resin compositions comprising polyglycidyl xylylenediamine, with a relatively low viscosity and high heat distortion temperature, suitable for adhesives and coatings, without disclosure in either of Tashiro, et al. or Huang, et al. of whether or not the composition is permeable to fuel. It is emphasized that Tashiro, et al., and Huang, et al. are silent as to the structures formed having fuel barrier properties. In view of differences in technology in the teachings of the applied references, and further in view of differences in problems addressed by each of these references, it is respectfully submitted that one of ordinary skill in the art concerned with in Gerdes,

et al. would not have looked to the teachings of Tashiro, et al. or of Huang, et al. In other words, it is respectfully submitted that the teachings of these references are directed to non-analogous arts.

In any event, particularly in view of the differences in technology in the teachings of the applied references, and also in view of differences in problems addressed by each, it is respectfully submitted that there would have been no proper reason to combine the teachings of these applied references, as applied by the Examiner. Absent such reasons, it is respectfully submitted that the combination of teachings of these references as applied by the Examiner is improper under the guidelines of 35 USC 103, using impermissible hindsight.

It is emphasized that as the epoxy resins curable by the curing agent disclosed therein, Tashiro, et al. discloses only glycidyl ethers of polyhydric phenols or polyhydric alcohols. Note the paragraph bridging columns 2 and 3 of this patent. It is respectfully submitted that Tashiro, et al. is completely silent with respect to glycidylamine of xylylenediamine.

In addition, it is respectfully submitted that the epoxy resin composition of Tashiro, et al. is to provide a material having improved compatibility with tar (that is, an epoxy paint for tar). It is respectfully submitted that Tashiro, et al. provides no disclosure with respect to gasoline barrier properties of a cured product of the epoxy resin composition described therein. It is respectfully submitted that the teachings of Tashiro, et al., even in combination with the teachings of the other references applied by the Examiner, including Gerdes, et al., would have neither taught nor would have suggested the features of the present invention as discussed previously, including at least features of claim 1 discussed previously.

Similarly, note that the epoxy resin of Huang, et al. is disclosed as an adhesive and casting, Huang, et al. teaching that polyglycidyl xylylenediamines obtained by the reaction between xylylenediamine and epichlorohydrin have a relatively low viscosity resulting in good workability and giving a cured product exhibiting a high heat distortion temperature. To be emphasized is that this reference, also, provides no disclosure with respect to gasoline barrier properties. Thus, the teachings of Huang, et al. even together with the teachings of Gerdes, et al. and Tashiro, et al. would have neither taught nor would have suggested the gas barrier properties achieved by the structures of the present invention, including the coating layer.

It is respectfully submitted that the Examiner has picked and chosen bits and pieces of each of Tashiro, et al. and of Huang, et al., in light of the teachings of the fuel impervious polymeric article of Gerdes, et al., in coming to a conclusion of obviousness of the presently claimed subject matter. It is respectfully submitted that the only reason for choosing bits and pieces of Gerdes, et al. as applied by the Examiner is Applicants' disclosure. Such hindsight use of Applicants' disclosure is clearly inappropriate under the requirements of 35 USC 103.

Thus, the contention by the Examiner on page 2 of the Advisory Action mailed December 14, 2007, that the combination of Gerdes, et al., Tashiro, et al. and Huang, et al. discloses the skeletal structure, "as the claimed epoxy and curing agent are disclosed", is noted. However, as discussed previously, choosing bits and pieces of the teachings of the secondary references while disregarding the teachings of these references as a whole, including the compositions of these references as a whole, is improper under 35 USC 103.

Moreover, even assuming, arguendo, that the combined teachings of Gerdes, et al., Tashiro, et al. and Huang, et al. would have disclosed the specific materials of the coating layer as in the present claims, the Examiner has provided no basis for concluding that the coating layer taught by the references contains skeletal structure represented by the formula (1) in an amount of 30% by weight or more based on the weight of the coating layer. Again, attention is directed to the calculations set forth earlier herein, showing that in the Example in Gerdes, et al. the content of the formula (1) would be smaller than 17% by weight, were xylylenediamine used in place of the diamines 1 and 2 in the same molar amounts in Gerdes, et al. It is respectfully submitted that this would be the sole basis for determining an amount of formula (1) skeletal structure, from the teachings of Gerdes, et al. and/or the combined teachings thereof with teachings of Tashiro, et al., and of Huang, et al., with respect to a fuel impervious polymeric article. Clearly, the disclosures of the applied references would have taught away from the amount of the skeletal structure represented by the formula (1) in the coating layer as in the present claims, and advantages thereof.

As acknowledged by the Examiner in the last line on page 2 of the Office Action mailed August 10, 2007, Gerdes, et al. fails to disclose, inter alia, an epoxy resin having a glycidylamine part derived from metaxylylenediamine. It is respectfully submitted that the other applied references also fail to teach epoxy resins having a glycidylamine part as in the present claims. Thus, Tashiro, et al. fails to teach the claimed glycidylamines, describing glycidyl ethers derived from bisphenol A, for example.

On page 5 of the Office Action mailed August 10, 2007, the Examiner contends that Applicants argue that Tashiro, et al. fails to disclose the claimed

glycidylamine, describing glycidyl ethers derived from bisphenol A, for example; but that as neither glycidyl ether, or bisphenol A, is claimed, it is unclear how glycidyl ether or bisphenol A defines the presently claimed invention. It is respectfully submitted that the Examiner has mischaracterized Applicants' contention. That is, Applicants contend that Tashiro, et al. describes glycidyl ethers derived from bisphenol A, for example. Tashiro, et al. does not disclose the presently claimed glycidylamine. It is respectfully submitted that the teachings of Tashiro, et al., describing glycidyl ethers derived from bisphenol A, for example, would have neither disclosed nor would have suggested the presently claimed subject matter, including use of the presently claimed glycidylamine.

It is emphasized that glycidyl ether or bisphenol A is not recited in the present claims, but glycidyl ethers derived from bisphenol A are described in Tashiro, et al. Such description in Tashiro, et al. would have neither taught nor would have suggested the presently claimed subject matter, including use of the presently claimed glycidylamine.

The Examiner has relied on Huang, et al. as disclosing polyglycidyl xylylenediamines. However, it is respectfully submitted that Huang, et al. does not disclose gasoline barrier properties of the cured products. Taking the teachings of the applied prior art in combination, it is respectfully submitted that there would have been no disclosure, nor any suggestion, of the superior gas barrier properties of the presently claimed coating layer, having, inter alia, the epoxy resin comprising at least one selected from an epoxy resin having a glycidylamine part derived from metaxylylenediamine and an epoxy resin having a glycidylamine part derived from 1,3-bis(aminomethyl)-cyclohexane, as in the present claims, and having other features as in the present claims and discussed previously.

In the paragraph bridging pages 4 and 5 of the Office Action mailed August 10, 2007, the Examiner mischaracterizes Applicants' argument, the Examiner stating that Applicants argue that Tashiro, et al. and Huang, et al. "disclose fuel permeability and barrier properties". However, this is not Applicants' argument. That is, Applicants argue that Tashiro, et al. and Huang, et al. are silent with respect to fuel barrier properties of the materials described therein. Absent disclosure of fuel barrier properties, and emphasizing that Gerdes, et al. provides structure having fuel barrier properties, it is respectfully submitted that one of ordinary skill in the art concerned with in Gerdes, et al. would not have looked to the teachings of Tashiro, et al. or Huang, et al.

The contention by the Examiner in lines 8-5 from the bottom on page 2 of the Advisory Action mailed December 14, 2007, that it is unclear what specific structure is being referred to in Applicants' argument on page 6 of the Request for Reconsideration filed November 13, 2007, that the claimed aspect of being able to form an amide by reacting with polyamine to form an oligomer "is directed to a structural limitation", is noted. It is respectfully submitted that Applicants have defined a property of the material, and this property must be given weight in determining patentability of the presently claimed structure.

Comments by the Examiner in paragraphs 3 and 4 on page 3 of the Advisory Action mailed December 14, 2007, are noted. It is respectfully submitted that the Examiner has misunderstood Applicants' arguments in connection therewith. That is, Applicants contend that Tashiro, et al. discloses only the glycidyl ethers of polyhydric phenols or polyhydric alcohols as the epoxy resin curable by the curing agent taught therein. Such glycidyl ethers of polyhydric phenols or polyhydric alcohols taught by Tashiro, et al. are different from, and would have neither taught

nor would have suggested, the epoxy resins in the present claims (that is, at least one selected from an epoxy resin having a glycidylamine part derived from metaxylylenediamine and an epoxy resin having a glycidylamine part derived from 1,3-bis(aminomethyl)-cyclohexane). It is respectfully submitted that the Examiner has not provided any reason why one of ordinary skill in the art would have cured a glycidylamine of xylylenediamine of Huang, et al., using the curing agent of Tashiro, et al., absent the teachings of the present invention, hindsight use thereof being improper under the requirements of 35 USC 103.

To sum up, it is respectfully submitted that the teachings of the applied references, that is, of Gerdes, et al., Tashiro, et al. and Huang, et al., would not have been properly combinable, being from different technologies and addressing different problems; and that it is only through hindsight use of Applicants' disclosure, which of course is improper under the guidelines of 35 USC 103, would one of ordinary skill in the art have combined teachings of Gerdes, et al., Tashiro, et al. and Huang, et al., as applied by the Examiner. For this reason alone the rejection is improper.

In any event, even assuming, arguendo, that the teachings of the references as applied by the Examiner would have been properly combinable, such combined teachings would have neither disclosed nor would have suggested the specific epoxy resin and curing agent of the present claims, much less the coating layer having the skeletal structure of formula (1) and in particular amount thereof, as in the present claims, and advantages due thereto.

In view of the foregoing comments and amendments, and additionally in light of the concurrently filed RCE Transmittal, entry of the present amendments, and reconsideration and allowance of all claims presently pending in the above-identified application, are respectfully requested.

Applicants request any shortage in fees due in connection with the filing of this paper be charged to the Deposit Account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (case 396.42795X00), and credit any excess payment of fees to such Deposit Account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

By /William I. Solomon/
William I. Solomon
Registration No. 28,565

WIS/ksh
1300 N. Seventeenth Street
Suite 1800
Arlington, Virginia 22209
Tel: 703-312-6600
Fax: 703-312-6666